SEKONIC

STUDIO DELUXE III

L-398A

Operating Instructions

SAFETY PRECAUTION

This manual uses the following safety labels for ⚠ WARNING and ⚠ CAUTION that you must follow.

⚠ WARNING

Indicates hazards or unsafe practices that can result in severe personal injury or death.

⚠ CAUTION

Indicates hazards or unsafe practices that can result in the personal injury or damage to your L-398A exposure meter.

⚠ WARNING

- Keep Lumisphere, Lumidisc, Lumigrid or Highslide out of reach of young children, as swallowing such objects can cause suffocation.
- Please place in a location where an infant cannot reach and accidentally get the strap wrapped around his or her neck. There is a danger of strangulation.

⚠ CAUTION

- This L-398A has a powerful magnet. Do not place it close to the following materials, otherwise the data stored may be damaged or the products may malfunction:
  Cash cards, floppy disc, other magnetic cards, TV Set, CRT display or LCD, and other apparatus sensitive to magnetic fields.

CONTENTS

SAFETY PRECAUTION
CONTENTS
1. Features 1
2. Specifications 3
3. Part Designations 4
4. Accessories 5
5. Basic Operation of Meter Unit 6
    1. Stopper Button Operation 6
    2. Zero Position Check and Adjustment 6
    3. Memo Pointer Operation 7
6. Standard Accessory Operation 8
  Incident Light Measurement 8
    1. Lumisphere 8
    2. Lumidisc 11
  Reflected Light Measurement 12
    1. Lumigrid 12
  Other Operations 14
    1. Exposure Value (EV numbers) Readout 14
    2. Employing Cine Scale 14
    3. Using Exposure Multipliers (-2, -1, +1, +2) 15
7. Optional Accessories Operation 16
    1. Direct Reading Slides 16
    2. Direct Reading Slide Application 17
8. Handling Cautions 18

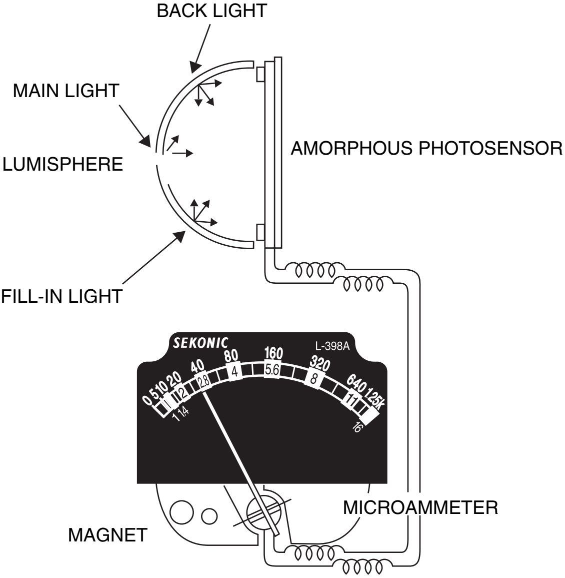
1. FEATURES

Nearly all photographic subjects combine complex variations of strongly reflecting surfaces (high reflectivity) and weakly reflecting surfaces (low reflectivity). These variations delicately influence exposure determination and to which portion the exposure is set becomes a vital factor that considerably affects the appearance of the finished photograph.

Although risk of failure can be minimized by taking maximum and minimum readings of all portions of the subject, then averaging the values, such an approach is both time consuming and tedious. The Studio Deluxe III is the answer to this problem.

1. Optimum exposure meter for incident light measuring method (also applicable for reflected light method.)
2. Freely rotatable light sensor section for very easily performed measurements.
3. Meter stopper mechanism allows operation while hand is released from meter.
4. Meter release mechanism is also included which allows the needle to deflect freely. This provides greater convenience when determining light balance.
5. Memo pointer enables easier light balance setting.
6. Lumisphere detects the same light as strikes the subject. Since subjects are normally 3-dimensional, according to the lighting conditions, brighter surfaces (highlights) and darker surfaces (shadows) are produced (illumination contrast). The Studio Deluxe III mechanism automatically takes into account the strength of light from all directions, causing the meter to indicate a value applicable to photography. It is thus most convenient for determining typical exposures.
7. After combining film sensitivity and shutter speed, direct reading slides (optional) can be used for directly determining the aperture valve.
8. AMORPHOUS PHOTOSENSOR is employed as light sensing element, eliminating need for battery.
9. Wide selection of available accessories allows numerous photographic techniques to be enjoyed.

1. FEATURES



⚠ Caution:

- **Your L-398A has a powerful magnet. Do not place your L-398A close to the following materials, otherwise the data stored may be damaged or the product may malfunction: Cash cards and other magnetic cards, floppy disk, TV Set, CRT display, and other apparatus sensitive to magnetic fields.**

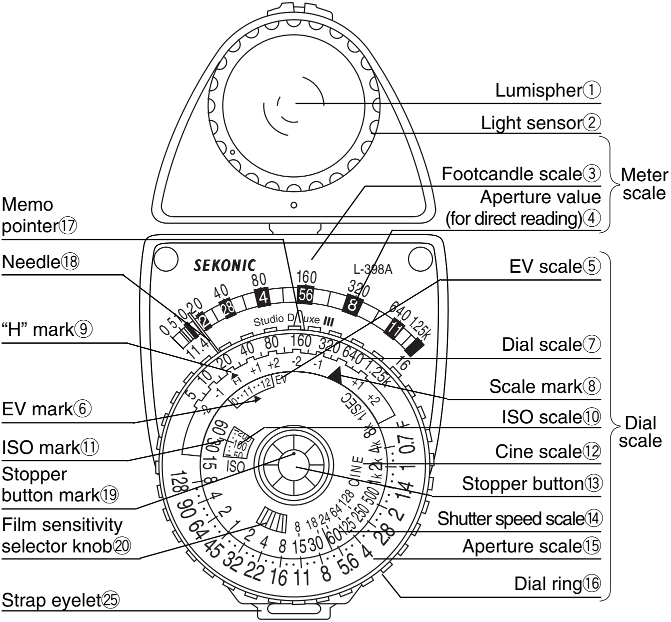
2. SPECIFICATIONS

Type	Analog exposure meter for ambient light
Light receiving method	Incident light and reflected light
Light receiving section	Incident light: Lumisphere and Lumidisc Reflected light: Lumigrid (30 deg. of light receiving angle)
Measuring range (ISO 100)	Incident light: EV4 to 17 Reflected light: EV9 to 17
Film speed	ISO 6 to 12,000 (in 1/3 step)
Shutter speed	60 sec. to 1/8000 sec. (in full step)
Aperture value	F0.7 to F128 (in 1/3 step)
Cine speed (f/s)	8, 18, 24, 64, 128
EV (Exposure Value)	EV1 to 20 (in 1/3 step)
Calibration Constant	Incident light: C=340 (Lumisphere), C=250 (Lumidisc) Reflected light: K=12.5
Operating temperature range	0℃ to 40℃
Storage temperature range	-20℃ to 60℃
Dimensions	112(H) × 58(W) × 34(D) mm
Weight	Approx. 190g

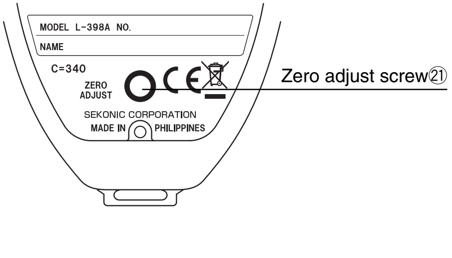
Note: Features and specifications are subject to change without notice.

3. PART DESIGNATIONS

Front

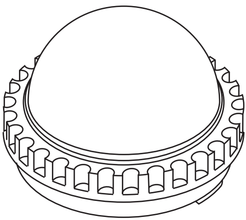


Rear

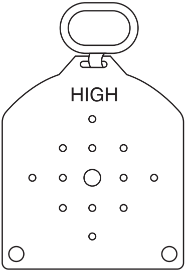


4. Accessories

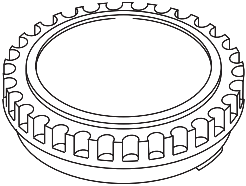
Lumisphere①



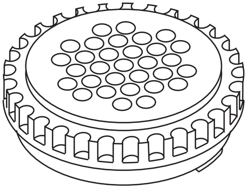
High (H) slide㉒



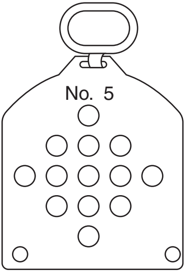
Lumidisc㉓



Lumigrid㉔



Optional Accessories
(sold separately)
Direct reading slides.



Total of 11 direct reading slides
(set of 11 slides in case).

⚠ Warning

- **Keep Lumisphere, Lumidisc, Lumigrid or High-slide out of reach of young children, as swallowing such objects can cause suffocation.**

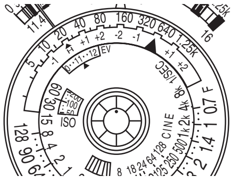
5. BASIC OPERATION OF METER UNIT

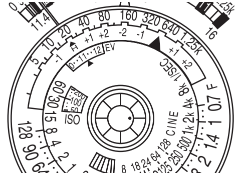
1.Stopper Button Operation

If the stopper button ⑬ is pressed when the stopper button mark ⑲ is set to ⊙ , the meter needle ⑱ deflects according to brightness. Then when the button is released, the needle remains fixed at the indicated position.

By holding the stopper button depressed and turning it clockwise so that the mark position becomes ⊙ , the needle is released.

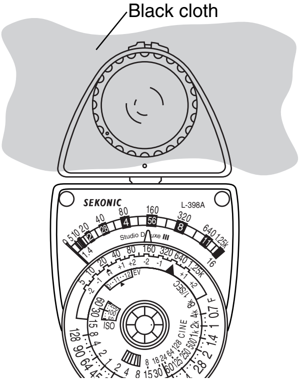
At this time, the meter will deflect freely even if the stopper button is released. To fix the needle, turn the stopper button counter-clockwise to where the mark is positioned ⊙ .

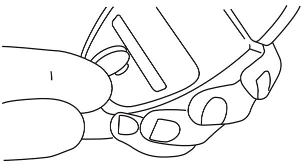




2.Zero Position Check and Adjustment

With stopper button in released ⊙ position, cover light sensor with hand or black cloth to completely block light. Check that meter needle ⑱ correctly indicates zero position. If the indication deviates from zero, while observing meter indication, use a coin or similar tool to turn the rear zero adjust screw ㉑ and adjust for zero indication.

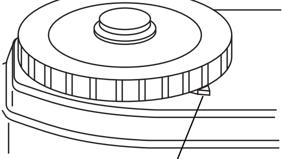




3.Memo Pointer Operation

Rotate both Dial Ring ⑯ and dial of Memo Pointer ⑰ to align with Needle ⑱ position or desirable setting position.

※ See page 11 for actual use.

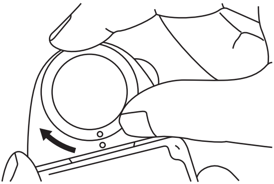


6. STANDARD ACCESSORY OPERATION

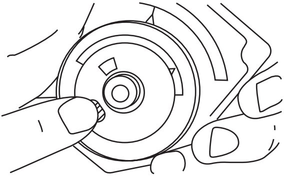
Incident Light Measurement

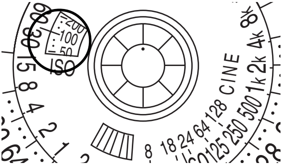
1. Lumisphere

a. Mount Lumisphere ① to light sensor ②. To mount, align white dots of Lumisphere frame and light sensor, then turn Lumisphere carefully clockwise (approx. 45 deg.)to secure.

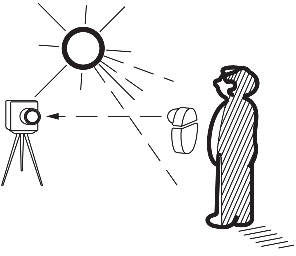


b. Set film sensitivity knob ⑳ to sensitivity value of employed film. Set ISO value to right side ISO mark ⑪.
Photo shows setting for ISO 100.

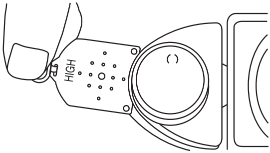


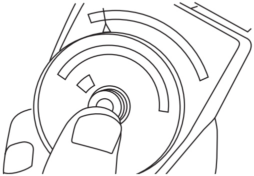


c. From position where subject is to be measured, point Lumisphere ① in direction of camera. (Light sensor ② can be turned freely.)



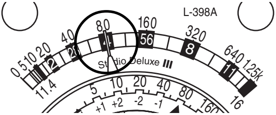
d. Hold meter erect and press stopper button ⑬. Meter needle ⑱ deflects according to brightness. When the stopper button is released, the meter needle becomes fixed at the deflected position. If the location is excessively bright and the meter needle deflects beyond scale, insert the High slide ㉒.

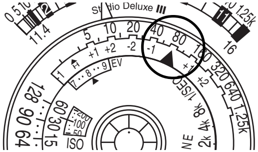


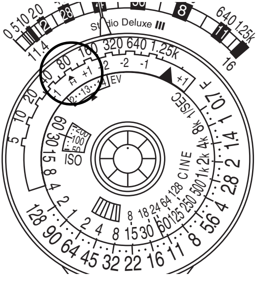


e. Read the footcandle scale ③ of the meter needle.

f. Transfer footcandle value to the dial scale ⑦. Rotate the dial ring ⑯ and set the ▲ scale mark ⑧. If the High slide ㉒ has been inserted, set the $\underset{\text{H}}{\blacktriangle}$ mark ⑨.







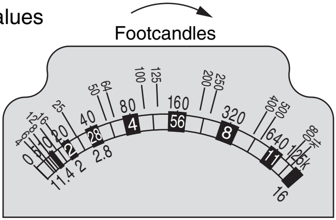
6. STANDARD ACCESSORY OPERATION

g. At this time, the shutter speed scale ⑭ and aperture scale ⑮ combination becomes the correct exposure.

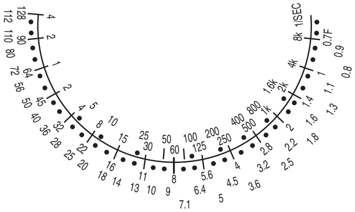
Example: With High slide inserted, meter indicates 80 footcancles. At ISO 100, the proper exposure becomes 1/250 sec at F/5.6, 1/30 sec at F/16 and 1 sec at F/90.

h. By changing ISO setting, the set combination of shutter speed and aperture scale is automatically altered to the appropriate one corresponding to the changed ISO value.

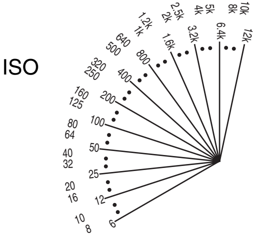
※ Meter scale intermediate values



※ Intermediate values for Shutter speed and aperture scale

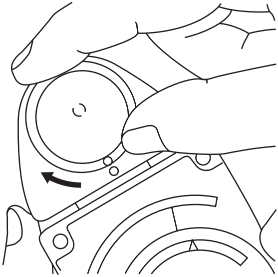


※ Film sensitivity intermediate values



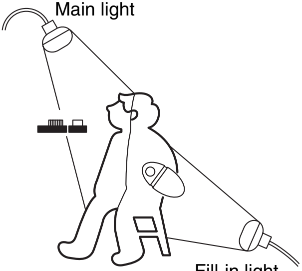
2.Lumidisc

Employ for illumination contrast adjustment and illuminance measurement.



● Contrast measurement

a. Mount Lumidisc ㉓ to light sensor ②. Install in the same manner as Lumisphere. (See P. 8)
b. Hold meter at subject position and point Lumidisc ㉓ directly toward center of main light.
c. Press stopper button ⑬ and read meter scale footcandle indication ③.
d. Turn the memo pointer dial and set the memo pointer ⑰ at the footcandle value the needle points to.
e. In the same manner, measure the fill-in light. In this case, take care that light from main source does not enter sensor.
f. Read a difference between the footcandle value the memo pointer is set (see above d) and the one for fill-in light (= needle position).
   Ratio between main and fill-in light footcandles becomes the contrast ratio.



Example: With main light at 640 footcandles, fill-in light reads 320 footcandles. Illumination contrast ratio becomes;

$$\frac{640}{320} = \frac{2}{1} \text{ or } 2:1$$

6. STANDARD ACCESSORY OPERATION

● Illuminance (Lux) measurement

a. Mount Limidisc ㉓ to light sensor ② in the same manner as Lumisphere.

b. Place Lumidisc ㉓ parallel with the light source.

c. Press stopper button ⑬ and read meter scale footcandle indication ③.

d. Multiply this value by 10.76 to obtain lux.

Example: 80 x 10.76 = 860.8 lux

If meter deflects beyond scale, insert High slide ㉒, then multiply footcandle indication by 32.

Example: 80 x 32 = 2560 footcandles

2560 x 10.76 = 27545.6 lux

Reflected Light Measurement

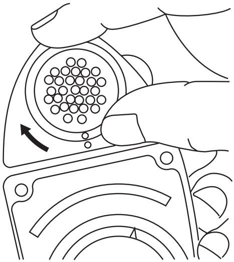
1.Lumigrid

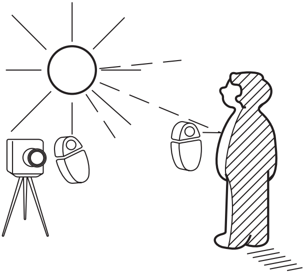
a. Mount Lumigrid ㉔ to light sensor ② in the same manner as Lumisphere ①. (See P.8)

b. Set sensitivity value of employed film. Setting is performed in the same manner as for incident light measurement. (See P.8)

c. From camera position, point Lumigrid ㉔ directly toward part of subject to be measured.

d. In case of measuring narrow areas, as close as possible to the subject, measure reflected light from main point of subject. Use adequate care at this time that meter shadow etc. does not interfere.

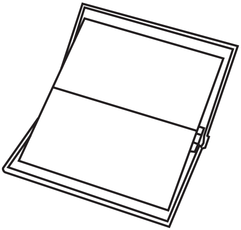




e. Press stopper button ⑬, and read meter scale footcandle indication ③. However, since footcandles are units of incident light only, this value becomes simply a reference.
f. Transfer indicated value to dial scale ⑦. Rotate the dial ring ⑯ and set ▲H mark ⑨.
g. At this time, shutter speed scale ⑭ and aperture scale ⑮ combination becomes the correct exposure.

Note:Do not employ slides for reflected light measurement.

※ More accurate results can be obtained for reflected light measurement by using a Gray card (optional accessory).



6. STANDARD ACCESSORY OPERATION

Other Operations

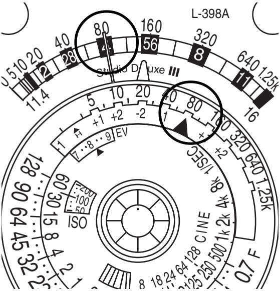
1.Exposure Value (EV number) Readout

Reading this exposure value to perform setting becomes convenient for cameras which employ a light value system of shutter and aperture combination.

a. Read meter needle ⑱ foot-candle indication ③.

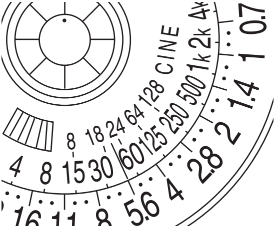
b. Transfer this number to the dial scale ⑦. Rotate dial ring ⑯ and set ▲ scale mark ⑧. If the High slide is inserted, set the H mark ⑨.

c. EV value indicated by EV mark ⑥ becomes the correct exposure value.



2.Employing Cine Scale

Incident and reflected light measurements during cine photography are performed in the same manner as described previously. However, since the cine scale ⑫ numerals correspond to cine camera film speed, read the aperture scale ⑮ indication that pertains to the employed film speed.



Note: Some cine cameras possess faster exposure times due to a narrower rotating shutter angle (angle of light transmitting portion). It is important to know the accurate shutter angle value versus cine speed for your camera in order to determine proper exposure. Refer to the camera operating instructions, maker's catalogue, etc. for shutter angle information.

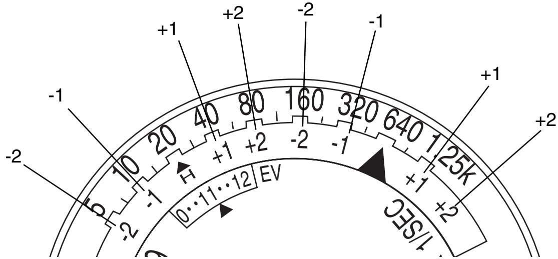
Shutter angle and exposure calculation:

$$T = \frac{\theta}{360 \times R}$$

R = Frames exposed in 1 second
T = Exposure time
θ = Shutter angle

3.Using Exposure Multipliers (-2, -1, +1, +2)

Exposure multiplier indications are provided at both sides of the ▲H and ▲ marks of the dial scale. Use the -1 or -2 mark when desiring to cut the exposure to 1/2 of 1/4 and +1 or +2 mark to multiply the exposure by 2 or 4.
Set the appropriate mark, instead of the ▲H or ▲ mark, to the dial scale value.



7. Optional Accessories Operation

1.Direct Reading Slides

A total of 11 slides are available, all of which may be used together with the Lumisphere and Lumidisc. (Note that they cannot be used with Limigrid.) The High slide, as mentioned previously, is employed for varying the measuring range in 2 steps (high and low illumination), however, it can also be used for direct reading.

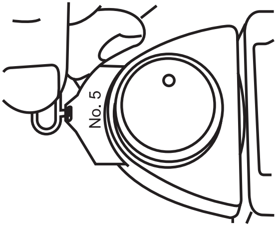
Slide No. \ Shutter speed	1/15	1/30	1/40	1/50	1/60	1/125	1/250	1/500
1	ISO 64	ISO 125	ISO 160	ISO 200	ISO 250			
2	50	100	125	160	200	400		
3	40	80	100	125	160	320		
4	32	64	80	100	125	250		
5	25	50	64	80	100	200	400	
6	20	40	50	64	80	160	320	
7	16	32	40	50	64	125	250	
8		25	32	40	50	100	200	400
9		20	25	32	40	80	160	320
10		16	20	25	32	64	125	250
11			12	16	20	40	80	160
HIGH					12	25	50	100

Note:

- HIGH slide can be used as a part of direct reading slide.
- One set of slides consists of slide numbers 1 to 11 in a case. HIGH slide is standard accessory and not included in the slide set, though there is a space to store it in the case of slide set.

2.Direct Reading Slide Application

When photographing, select slide from the above table according to film sensitivity and shutter speed. Insert slide and perform measurement in the same manner as for incident light. Read directly the aperture value ④ indicated by the meter needle ⑱.



※ Since it is not necessary to rotate the dial when employing direct reading slides, setting becomes extremely fast and convenient.

8. HANDLING CAUTIONS

Since the Studio Deluxe III is a high precision instrument, use ample care in regard to the following points.

- Avoid dropping or subjecting it to strong shock.
- Do not store in areas subject to magnetic fields or where insect repellants are located (metal cabinets, clothing dressers, etc.).
- Keep Lumisphere and Lumidisc clean and protect from dust and scratches.
- Wipe Lumisphere and Lumidisc with a dry soft cloth if it becomes dirty. Never use organic cleaners (like Thinner or benzene).

SEKONIC CORPORATION
7-24-14, OIZUMI-GAKUEN-CHO, NERIMA-KU,
TOKYO 178-8686 JAPAN
TEL : +81(0) 3-3978-2335 FAX:+81(0) 3-3978-5229
http://www.sekonic.co.jp/English

JG1297521